IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Original) An RF transmitting device of a mobile radio communication base station system in a CDMA system having a plurality of channel cards providing baseband signals on I/Q channels for multi-frequency assignment and a transmitting antenna, said RF transmitting device comprising:

a digital unit for digital modulating the baseband signals on the I/Q channels by each frequency assignment provided from said plurality of channel cards, coupling the digital modulated signals by the frequency assignment, and then converting the coupled multi-frequency assignment digital modulated signal into an analog signal;

an analog frequency up-converting unit for primarily up-converting the analog-converted multi-frequency assignment signal in said digital unit into an IF signal and a secondarily up-converting the converted IF signal into an RF signal; and

a transmitting unit for amplifying the secondarily up-converted RF signal to an arbitrary transmitting output level and transmitting the amplified signal via said transmitting antenna.

2. (Original) The RF transmitting device as claimed in claim 1, wherein said digital unit comprises: a plurality of digital modulators for executing a QPSK modulation for each of the CDMA baseband signals outputted from said plurality of channel cards by the frequency assignment; a coupler for coupling the each frequency assignment signals modulated in said plurality of digital modulators; and a D/A converter for converting the coupled each frequency assignment QPSK modulated signal in said coupler into an analog signal to thereby output the converted analog signal to said analog frequency up-converting unit.

3. (Amended) The RF transmitting device as claimed in claim [1] **2**, wherein each of said

plurality of digital modulators comprises: a plurality of low-pass filters for low-pass filtering the baseband signals on the I/Q channels outputted from each of said plurality of channel cards by the frequency assignment; a plurality of interpolation filters for filtering the low-pass filtered baseband signals on the I/Q channels; a digital local oscillator for outputting arbitrary local frequencies having the phase difference of 90; a plurality of mixers for mixing each of the local frequencies having the phase of 0 and 90 generated from said local oscillator and each of the baseband signals on the I/Q channels which are sequentially passed through said plurality of low-pass filters and said plurality of interpolation filters; and an adder for adding the mixed signals on the I and Q channels in said plurality of mixers.

4. (Original) The RF transmitting device as claimed in claim 3, wherein said local frequencies generated from said digital local oscillator within each of said plurality of digital modulators are generated at frequency assignment intervals, that is, the frequency of 1.25MHz intervals.

5. (Twice Amended) The RF transmitting device as claimed in claim [1] **2**, wherein the modulated signals by each frequency assignment in said digital unit are coupled serially in the same manner that the modulated signal in the Nth digital modulator of said plurality of digital modulators is outputted to the N-1th digital modulator and primarily coupled to the modulated signal corresponding to the N-1th frequency assignment in the N-1th digital modulator, and the primarily coupled N+(N-1)th frequency assignment modulated signal is outputted to the N-2th digital modulator and secondarily coupled to the modulated signal corresponding to the N-2th frequency assignment in the N-2th digital modulator, whereby the secondarily coupled multi-frequency assignment modulated signal is outputted to said D/A converter.

6. (Original) The RF transmitting device as claimed in claim 1, wherein said analog frequency up-converting unit comprises: a first frequency up-converter for up-converting the

coupled multi-frequency assignment analog signal outputted from said digital unit into an arbitrary IF signal; a band-pass filter for band-pass filtering the coupled multi-frequency assignment IF signal outputted from said first frequency up-converter to an arbitrary frequency bandwidth; and a second frequency up-converter for converting the IF signal filtered in said band-pass filter into an RF signal to thereby output the converted RF signal to said transmitting unit.

7. (Original) The RF transmitting device as claimed in claim 6, wherein said first frequency up-converter comprises: a first local oscillator for generating a fixed local frequency to convert the analog signal inputted into the IF signal; and a first mixer for mixing the fixed local frequency signal generated from said first local oscillator and the analog signal inputted and converting the mixed result into the IF signal having a constant center frequency of the multi-frequency assignment band.

8. (Original) The RF transmitting device as claimed in claim 6, wherein said band-pass filter is an SAW filter having the bandwidth of 3.75MHz, in order to accurately pass the multi-frequency assignment coupled signal.

9. (Original) The RF transmitting device as claimed in claim 6, wherein said second frequency up-converter comprises: a second local oscillator for generating a fixed local frequency to convert the filtered IF signal inputted into the RF signal; and a second mixer for mixing the fixed local frequency signal generated from said second local oscillator and the IF signal and converting the mixed result into the RF signal having a constant center frequency of the multi-frequency assignment band.

10. (Original) An RF transmitting device of a mobile radio communication base station system in a CDMA system having a plurality of channel cards providing baseband signals on I/Q

channels for multi-frequency assignment and a transmitting antenna, said RF transmitting device comprising:

a plurality of digital modulators for performing a QPSK modulation for each of the CDMA baseband signals outputted from the plurality of channel card by each frequency assignment;

a coupler for coupling the digital modulated signals by the frequency assignment in the plurality of digital modulators by the frequency assignment;

a D/A converter for converting the coupled multi-frequency assignment QPSK modulated signal in said coupler into an analog signal and outputting the converted analog signal to an analog frequency up-converting unit;

said analog frequency up-converting unit comprising a first frequency up-converter for converting the multi-frequency assignment analog modulated signal outputted from said D/A converter into an arbitrary IF signal, a band-pass filter for filtering the up-converted multi-frequency assignment IF signal in said first frequency up-converter to an arbitrary bandwidth, and a second frequency up-converter for converting the filtered multi-frequency assignment IF signal in said band-pass filter into an RF signal to thereby output the converted RF signal to a transmitting unit; and

said transmitting unit for amplifying the up-converted RF signal in said second frequency up-converter of said analog frequency up-converting unit to an arbitrary transmitting output level and transmitting the amplified signal via said transmitting antenna.

11. (Original) The RF transmitting device as claimed in claim 10, wherein said band-pass filter is an SAW filter having the bandwidth of 3.75MHz, in order to accurately pass the multi-frequency assignment coupled signal.

12. (Original) An RF transmitting device of a mobile radio communication base station system in a CDMA system having a plurality of channel cards providing baseband signals on I/Q

channels for multi-frequency assignment and a transmitting antenna, said RF transmitting device comprising:

a plurality of digital modulators by frequency assignment for executing a QPSK modulation for each of the CDMA baseband signals outputted by said plurality of channel cards and serially coupling the QPSK modulated signal in a most significant frequency assignment or a least significant frequency assignment with the QSPK modulated signal in a more significant frequency assignment or a less significant frequency assignment, in a sequential order, to thereby output a digital modulated signal in a multi-frequency assignment band;

a D/A converter for converting the coupled multi-frequency assignment QPSK modulated signal outputted from the most significant frequency assignment or the least significant frequency assignment digital modulator into an analog signal to thereby output the converted analog signal to an analog frequency up-converting unit;

said analog frequency up-converting unit comprising a first frequency up-converter for up-converting the coupled multi-frequency assignment analog signal outputted from said D/A converter into an arbitrary IF signal, a band-pass filter for band-pass filtering the coupled multi-frequency assignment IF signal outputted from said first frequency up-converter to an arbitrary bandwidth, and a second frequency up-converter for converting the multi-frequency assignment IF signal filtered in said band-pass filter into an RF signal to thereby output the converted RF signal to a transmitting unit; and

said transmitting unit for amplifying the up-converted RF signal in said second frequency up-converter of said analog frequency up-converting unit to an arbitrary transmitting output level and transmitting the amplified signal via said transmitting antenna.

13. (Original) The RF transmitting device as claimed in claim 12, wherein said band-pass filter is an SAW filter having the bandwidth of 3.75MHz, in order to accurately pass the multi-frequency assignment coupled signal.

14. (Added Previously) The RF transmitting device as claimed in claim 2, wherein the modulated signals by each frequency assignment in said digital unit are coupled serially in the same manner that the modulated signal in the Nth digital modulator of said plurality of digital modulators is outputted to the N-1th digital modulator and primarily coupled to the modulated signal corresponding to the N-1th frequency assignment in the N-1th digital modulator, and the primarily coupled N+(N-1)th frequency assignment modulated signal is outputted to the N-2th digital modulator and secondarily coupled to the modulated signal corresponding to the N-2th frequency assignment in the N-2th digital modulator, whereby the secondarily coupled multi-frequency assignment modulated signal is outputted to said D/A converter.